LYT-OR®

ATHENA-4

USER MANUAL

Please read over this manual before operation the light CE

ATTENTION

1. Must operate according to the user manual. Don't separate the light personally. Call the technician when the machine breaks down.
2. Please do not see the laser beam directly to avoid any damage.
3. Before connect or disconnect the power, please adjust the luminance of the laser diode to the least to avoid any damage to the laser diode.
4. This unit should be keep dry, do not use in the rain or dank and dusty environment. It can be use in the outdoor with the water-proof cover protector.
5. Set the light immobility and try to avoid strong shake or hit.
6. Prevent dust into the equipment to avoid problems.
7. Please keep that there's no other equipment or decorating materials obstructed the exhaust fan and the vent-pipe when the equipment was working.
8. Before connect power, check the plug is immobility or not, power line should be connect well.
9. Please do not open or close the equipment frequently that's to avoid any affect to the life span of the laser diode, and try the best to avoid the long time working.
10. Due to the characteristic of the laser diode, after three hours working, it should be close at least 25 minutes until the laser diode cooling then work again.
11. Don't touch the light or draw the power line when your hand was wet. And do not pull the electronic power line.
12. Maintain the distance at least 20M above from the equipment to the object.
13. This equipment does not have any parts can repair for the users, please do not open the equipment.
14. Don't connect power or operate the light before install lamp.
15. When the laser diode became dim or damaged please contact the dealer timely.
16. To use the original package when transport again and to avoid shake.
17. When use this lamp, you must turn on the lamp at first and then start the computer .If you open LASERSHOW software before turn on the lamp, please restart the LASERSHOW software.

Warning

1、Don't look the light directly to prevent make some destroy with eyes..
2、Keep the space between light equipments and the lighted things more than one meter.

OPEN THE BOX FOR CHECKING

In order to use this product safety and reasonable for the users, please read over this manual carefully before use and the operation must strictly according to this manual to avoid any damage to the product and personal safety.

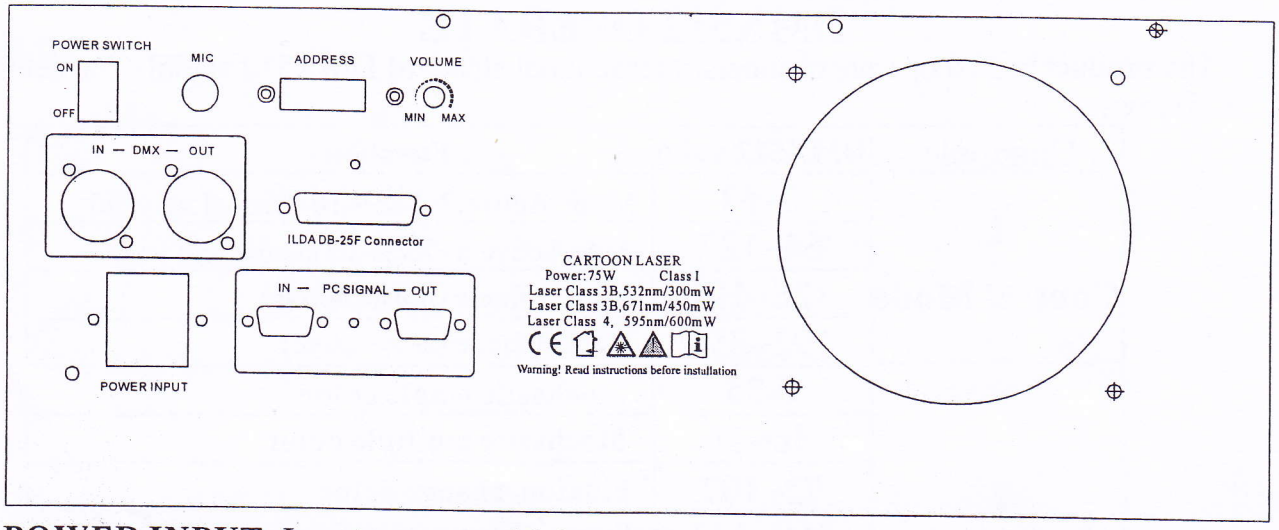
Once after received this products please take and put carefully. And check carefully that whether the product was damaged or not during the transportation and please check the following things were enclosed:

Laser light 1PCS
9 pin signal line 1PCS
3 pin signal line 1PCS
25 pin signal line 1PCS
Install CD 1PCS
Graphics USB card 1PCS
USB connection cable 1PCS
User manual 1PCS
Power cable 1PCS

INSTALLATION

1. Please check the voltage whether is the same with the one showed on the equipment or not.
2. It must ask for the technical person and set the light safety when installation. And let the light beam at the suitable angle.
3. When install this equipment please make sure there's no flammable surfaces (decorated things, etc) within at least 1.5M and maintain minimum distance of 0.5M from the equipment to the walls.
4. Please make sure that there's no other equipment or decorating materials obstructed the exhaust fan and the vent-pipe.
5. Products should be install immobility.
6. In case of safety, it's very important that to connect the earth with line.

Control Board Instruction



POWER INPUT: Input power, with inner fuse.

PC SIGNAL IN/OUT: USB connection port signal input/output

DMX IN/OUT: DMX 512 signal input/output

POWER ON/OFF: power on/off

MIC: Receive Music.

MIN-MAX: Music sensitivity potentiometer

ADDRESS: the 10th code is switch code. When the 10th code is OFF, 1~9 are function codes. When function code is 0, the working mode is Music Active (Master mode); when function code is 1, the working mode is Automatic (Master mode); when function code is 2 or more, the working mode is Slave mode. When the 10th code is ON,1~9 will be DMX address codes. The address code of first light usually by 1, the second light is 11 and so on.

ILDA DB 25 F Connector: signal input connection port of the laser perform software that in accordance with the ILDA standard.

NOTE:

1. When **PC SIGNAL IN** and **ILDA DB 25F connector** ' s connection port are free, the lamp will drive by the inside program, temporality it can control by music or DMX 512 signal.
2. When **PC SIGNAL IN** connects with USB interfacial card, the lamp will be control by software **LASERSHOW** which was installed in the computer.
3. After connect the ILDA DB 25F, The lamp will change to ILDA connected port drive mode ,this connection port can receive all the signal of laser perform software that accord with the ILDA standard, such as LD-2000 of Pangolin Company.
4. When the **PC SIGNAL IN** and the **ILDA DB 25F Connector** were connected, then the system will at an abnormal statement, lamp still control by inside program , but not respond to the exterior input signal.

DMX512 OPERATE

The product has 10 operate channels(international standard DMX512 signal),The details as follow:

Channel	DMX512 value	Function
1 Control Mode	0~63	Music Active,3~7&9~10 channel no valid
	64~127	Auto Active,3~7&9~10 channel no valid
	128~191	Manual mode (music active)
	192~255	Manual mode (auto active)
2 change color	0-35	Stochastic single color
	36~71	Stochastic multiple color
	72~107	Fluxion change color
	108~143	Fixup color
	144~179	Red
	180~215	Yellow
	216~251	Green
	252~255	Close
3 picture	0~255	86 pictures(0~255)/3=(0~85)
4 horizontal & vertical roll	0-63	No rolling
	64~127	Horizontal roll
	128~191	Vertical roll
	192~255	Horizontal & vertical roll
5 Dot rotation	0~127	No rotation
	128~255	Rotation
6 Horizontal & vertical move	0-63	No move
	64~127	Horizontal move
	128~191	Vertical move
	192~255	Horizontal & vertical move
7 Horizontal & vertical stretch	0~63	No stretch
	64~127	Horizontal stretch
	128~191	Vertical stretch
	192~255	Horizontal & vertical stretch
8 Speed	0~255	12 grade speed(0~255)/23=(0~11)
9 Slow-draw speed	0~255	12grade speed(0~255)/23=(0~11)
10 Size	0~255	26 grade size(0~255)/10=(0~25) 0 original size 1~11 reduce 12~25blow up

NOTE:The 8th channel can not be 0 in any mode.

Specification

- Voltage: AC 220V~240V, 50/60Hz
- Signal input power: -15~+15V
- X/Y axes beam scanning optical angle: 0~+/-30°
- Input signal bandwidth: 0~1000Hz
- Condition temperature: -10° C~35° C
- Total power: 75W
- Laser light power: Class 3 Green 532nm/300m W
  Class 3 Red 671nm/450m W
  Class 4 Yellow 595nm/600m W
- Fuse: 250V 3A, Φ5×20mm
- Net weight: 19 kg
- Dimension: 44 x 30 x 19.5 cm

Maintain

- Maintenance should be performed every 15-day period, by using a sponge which is dipped with alcohol, rather than wet cloth or other chemical liquid, to clean the mirror.
- Warning: Power must be disconnected before maintenance or repair. Do not look at the light source directly.

ATTENTION: DISCONNECT INPUT POWER BEFORE MAINTAIN.
DON'T LOOK STRAIGHTLY AT THE LIGHT SOURCES.
NOTE: Don't seperate laser machine from laser power and repaire them by yourself otherwise no good repair service will be supplied.

Instruction of laser scanning-control system

Control software function fast description:

1. Install with USB interface card, have disconnected drawing and RGB laser beam control function.
2. Can be installed with Window Me/Window 2000/Window XP operation system.
3. Working in the different step (need to install USB assembly-line device)
4. Can download PLT document by Corel Draw software.
5. Input words by typing directly
6. Disconnected drawing and RGB laser beam
7. Section editing and display function
8. Sequence editing and display function
9. RGB color invert.
10. Document operating function

System Requirements

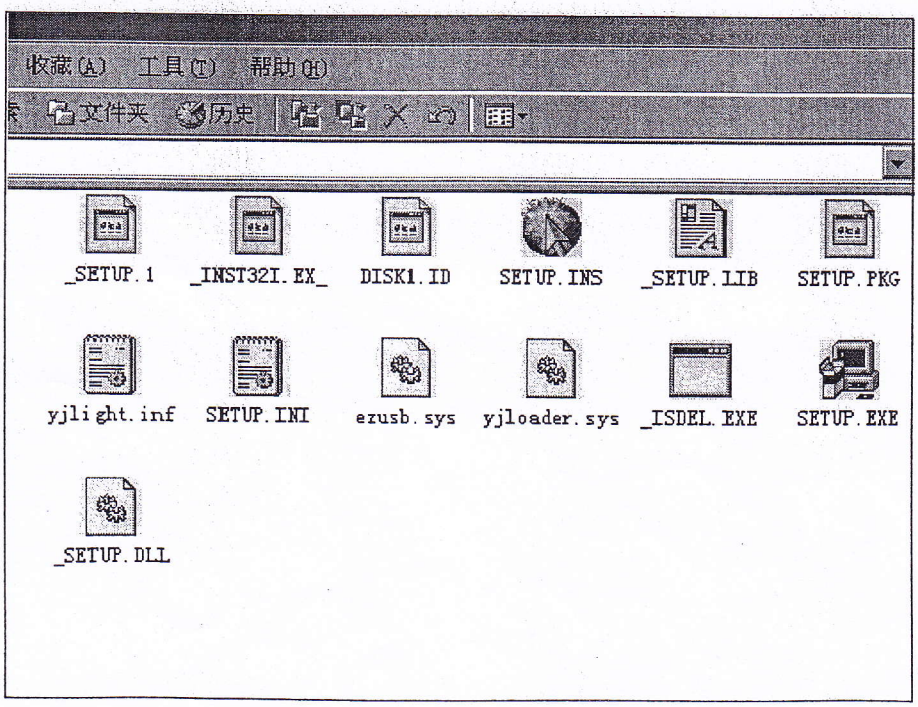
1. CPU's clock frequency in 1.7GHz or above
2. USB port agree with USB 1.1 agreement
3. 256MB or above memory
4. Display card memory is 32MB or above
5. The available space of HD is 1GB or above
6. Window 2000 / Win XP operation system. Higher system will be required if you want to control many lights. The operation system is very important for the working speed of lights.

Drive card program installation:

1. Connect PC, USB interface card and laser light well and then switch on laser light.
2. The system will search installation CD-ROM automatically when it finds new hard parts. Select yjlight.inf document from CD-ROM.

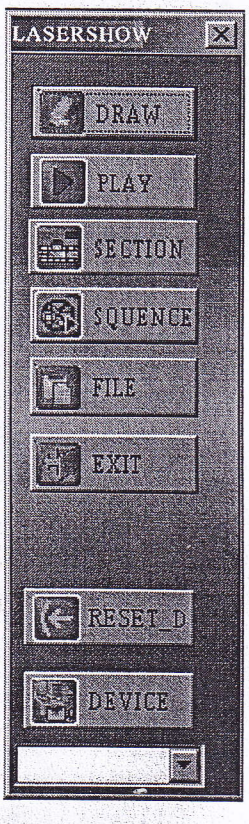
Application program Installation

1. Run setup.exe of CD-ROM to install application program:



Software operation

Please click **STAR, PROGRAM, LaserShow** and then following interface will appear:

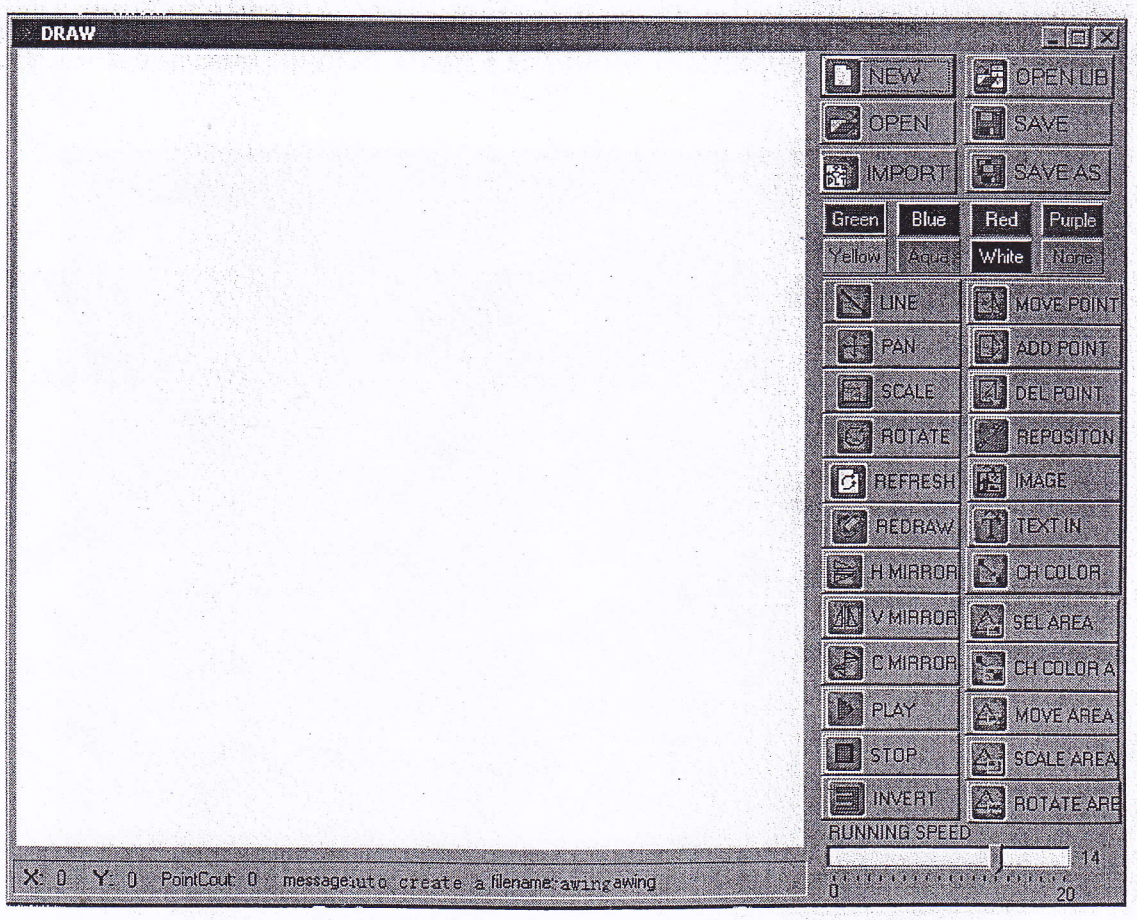


I. Main window function:

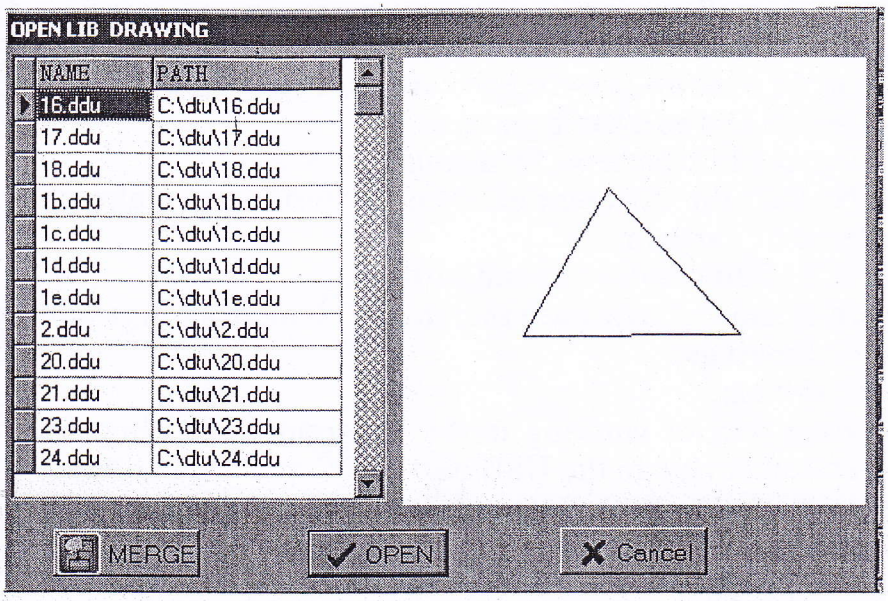
The button in main window is switch on / off function windows.

1. **DRAW**: Design and edit basic patterns.
2. **PLAY:** Display basic patterns by manual.
3. **SECTION:** Edit the different effect of patterns and make up basic patterns be cartoon.
4. **SEQUENCE:** Edit display list and cartoon.
5. **FILE:** Add or delete basic patterns; invert blank drawings and connection drawings.
6. **EXIT:** exit system.
7. The operating way of working in the different step: Plug the USB integrated device in the USB port of PC and then connect USB driving card signal lines of each laser light to USB integrated device. Switch on all laser lights and start up Application program and choose Usb-0; Start up another application program and choose Usb-1 and so on. Start up application program for each laser light and then you can control each light in the different step. (If PC has many USB ports, you won't need USB integrated device).

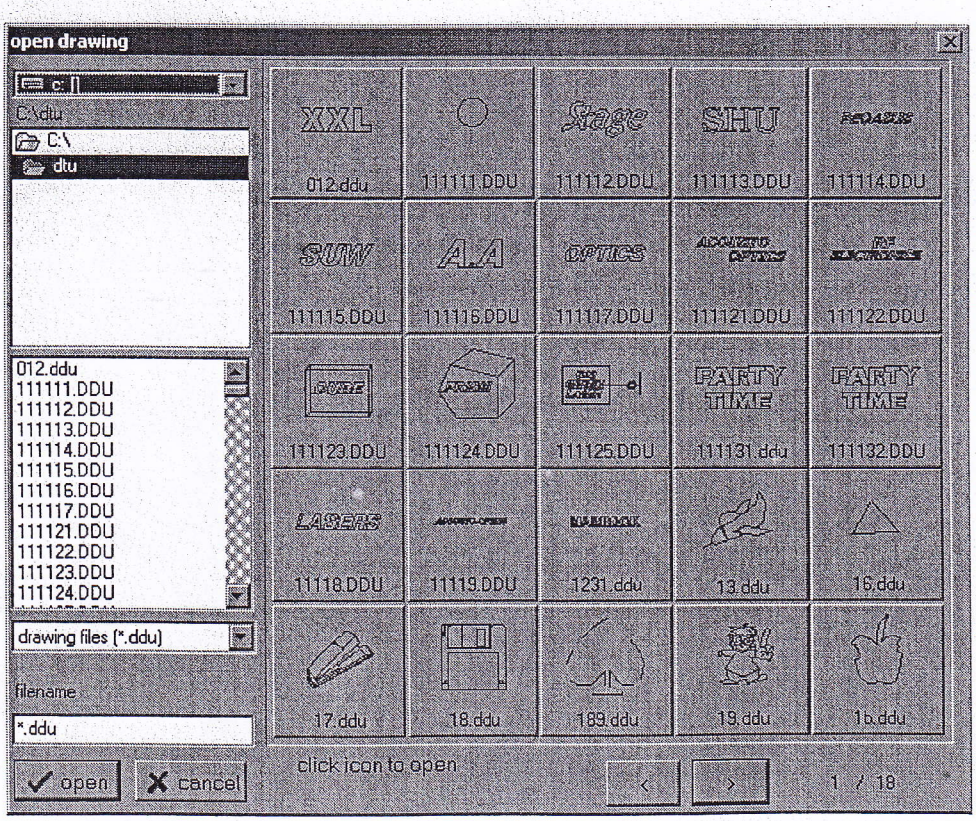
II. Draw



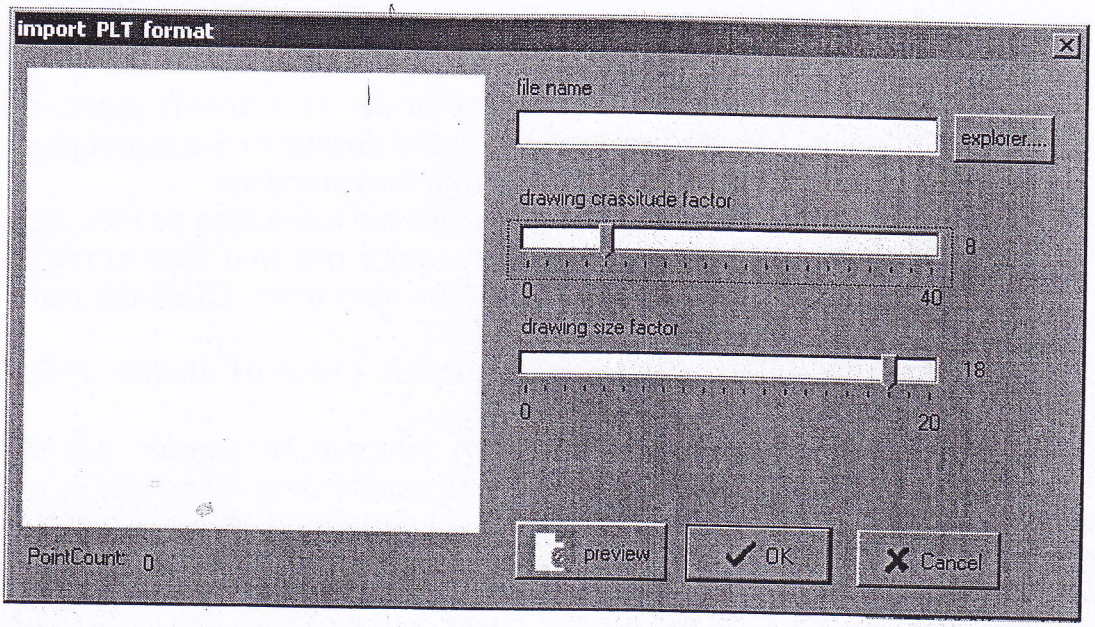
1. **NEW :** Click this button to create a new design. Furbish pre-design.
2. **OPEN LIB:** Click this button and then following dialogue box will appear:



2.1 Click **OPEN** button, it will open the chosen new design. Furbish pre-design.
2.2 Click **MERGE** button, and then unite the chosen design to the pre-design.
3. Open: Click this button to bounce out a window to display all the recognized designs (include all designs out of design file). Select up driver box and directory list box in the left. Select up breviary design and then recognized designs will be showed in the right. Use < and > button to turn pages; click the breviary design to open this design document, or input file's name in input box, and then click to open button.



4.**SAVE AS**: Click it and then one save dialogue box will appear. After save the design and then it will be added to design file automatic. Only the document in design file can be transferred in section editing.



5.**IMPORT**: Input HPGL format documents to computer console by CorelDraw. Click it and then dialogue box will appear as following:

5.1**Explorer** is to select the input document.

5.2Design precision is to confirm picture's precision and points. The higher precision and more points means slower display speed.

5.3**drawing size factor**: Adjust the size of designs (the tolerate value usually is OK).

6.**LINE:** Select one color from color board, and then click the drawing line button. Mouse and cursor are restricted to the white editing district. Press the left side of mouse to begin the first point. After move the mouse, and then click the left side, between these two points appear a line, continue to click the left side will draw line constantly. If need to end the drawing process, it can click the right key of mouse that there will be a beeline automatic appearing from design's initial place to the end place to form closed design. Mouse eliminates movement restriction, can move freely. If wanting to draw lines from the last end point, clicking the *LINE* button again.

7.**MOVE:** Move the design. The moved datum mark is the center mark of drawing field. The move distance is confirmed by the coordinate of mouse clicking point and the value of coordinate of datum mark.

8. **SCALE:** Use this button to zoom in or zoom out the design size. The range is from 1%~500%, the tolerate value is 100%. Attention: The operating is no valid if it is out of border.

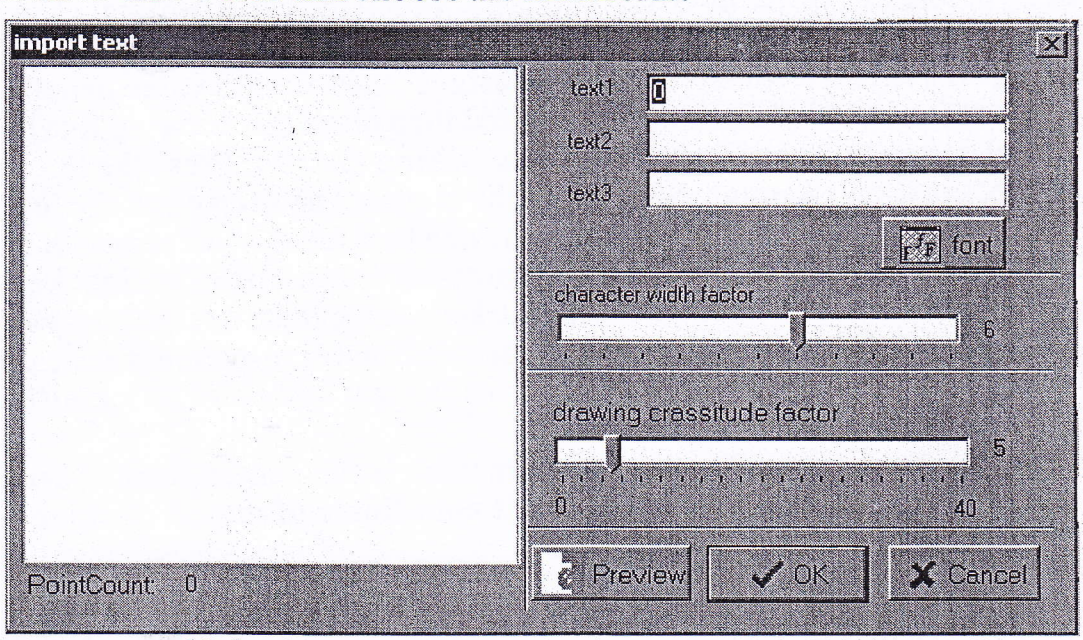
9. **ROTATE:** Rotate the design from -360° ~+360° . Attention: the operating is no valid if it is out of border.

10. **REFRESH:** Make the design be blank. It usually is operated with re-draw design or to delete background.

11. **REDRAW**: Redraw the design before refreshing and delete background.

12. **H MIRROR**: Copy the design and make the vertical perpendicular bisector of draw design area as center. New design connects to old one.

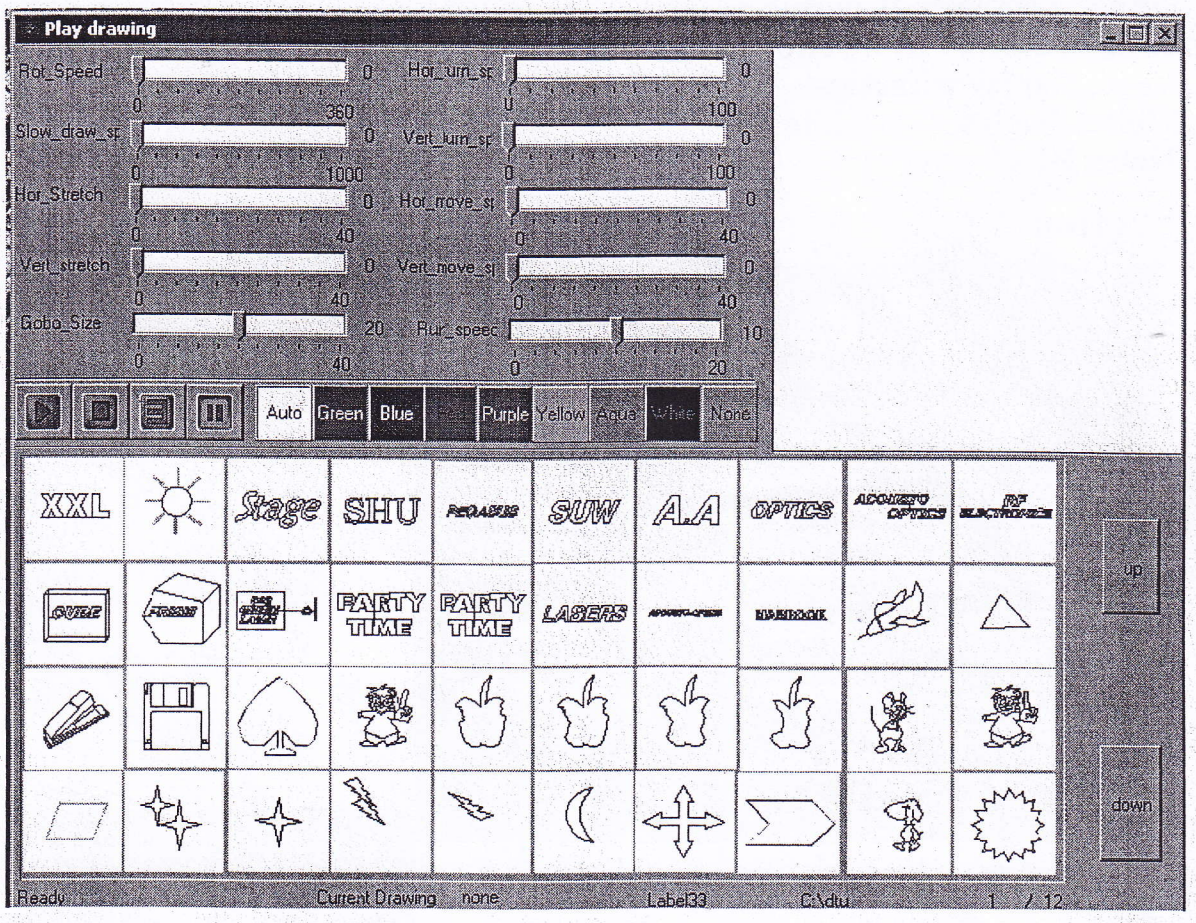
13. **V MIRROR**: copy the design and make the horizontal perpendicular bisector of draw design area as center. New design connects to old one.
14. **C MIRROR**: click this button and then one dialogue box will appear. Move the cursor to select copy number. Press OK to confirm your selection and then the design will be copied. New design connects to old one.
15. **MOVE POINT**: click the left side of mouse in design's proper place, select the point which you want to move and then move the mouse to the target place again, click the left side of mouse once again to finish the operation.
16. **ADD POINT**: Via this button can add a point between two points. After click this button and then click these two points one by one and then move mouse to move two lines to suitable position to finish the operation. Click the right side of mouse to cancel the operation.
17. **DEL POINT**: Click delete point in the suitable place of design to finish this operation.
18. **REPOSITION**: Select one point and then move it to another pointless two points will be as one point and will move at the same time when you move one of them.
19. **IMAGE:** input pictures to software as model of the drawing design from other files. Click the button and then one dialogue box will appear. Select suitable file name and open it, the selected pictures will appear in design editing area. And then you can draw the design by hand accord the input picture.
20. **TEXT IN**: Word input. Click this button, a dialogue will appear as follows: can input three-line words and choose the letterform.



20.1 **Character width factor**: adjust single character width. Chinese words' modulus can choose 10.
20.2 **drawing crassitude factor**: to adjust graphic precision and points. Higher precision, more points.
21. **CH COLOR:** select one color in the color board, and then click the button. The selected line segment will be changed to the selected color.
22. **SEL AREA**: click the blank and drag out a dashed rectangle, select a needed operating area.
23. **CH COLOR A**: select one color in color board, and then click it. The selected line segment will be changed to the selected color.

24. **MOVE AREA**: Move the point of which was chosen by an area chosen order. The center of movement is the center of the selected rectangle area. The direction and distance of movement is same as the mouse action.
25. **SCALE AREA**: zoom out or zoom in the designs within the selected rectangle area (from 1%~500%).
26. **ROTATE AREA**: rotate the design within the selected rectangle area (from -360° ~+360°).
27. **PLAY**: display the design in the design drawing area by clicking this button.
28. **STOP**: stop displaying.
29. **INVERT**: reverse the design in horizontal direction.
30. **RUNNING SPEED**: Adjust the displaying speed of scan mirror.

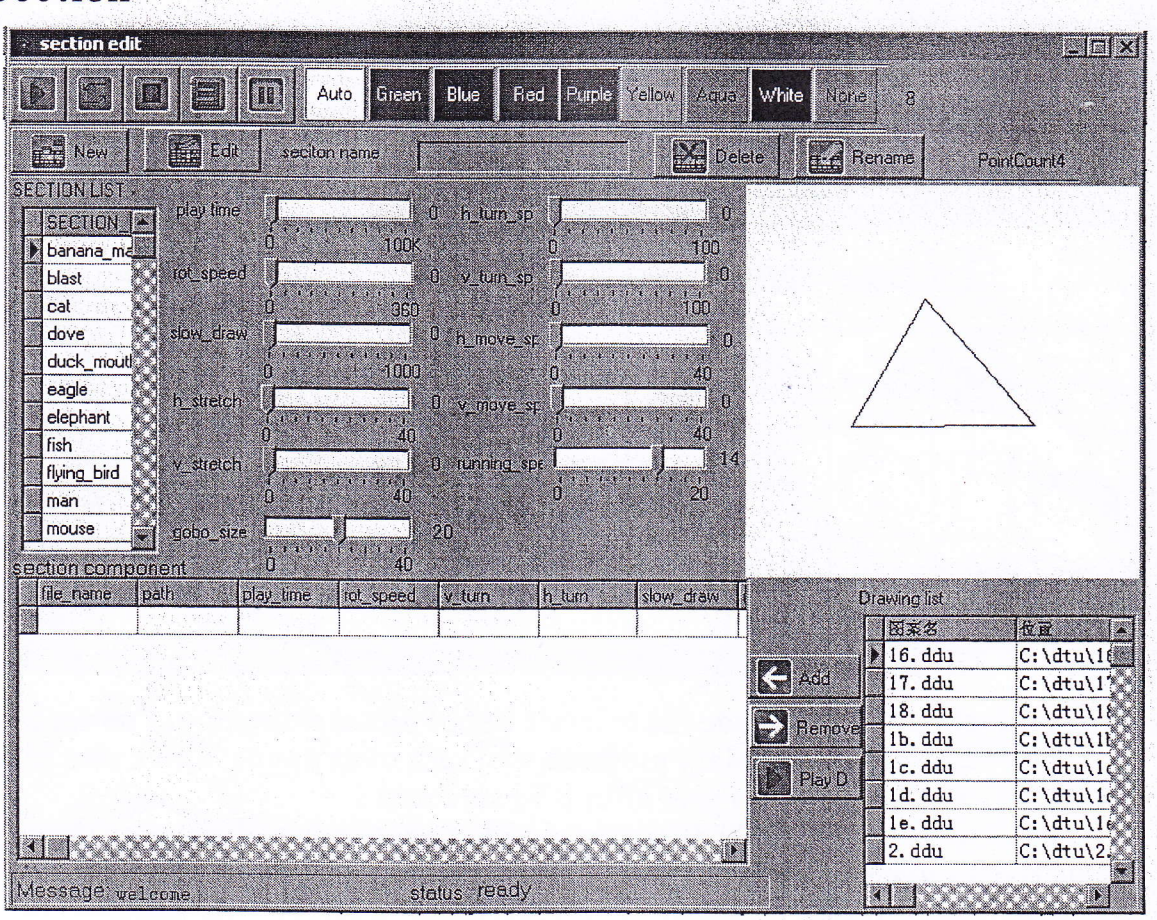
III. Playing



1. **Breviary design area**: Include the tolerate list of picture document under c:\dtu. Every page can show 40 breviary pictures, can turn over pages. Click one breviary picture, it will be covered red grid after it be selected.
2. **Display**: display the selected pictures. (It also can be displayed by double clicking the breviary picture).
3. **Stop**: Stop displaying.
4. **Reverse**: reverse the picture in horizontal direction.
5. **Pause**: Pause displaying.
6. **Rot_speed:** Adjust the speed of picture rotating.
7. **Slow_ drawing sp:** Adjust the drawing speed in gradually drawing pictures.

8.**Hor_stretch**: adjust the speed of picture in horizontal extend.
9.**Vert_stretch**: adjust the speed of picture in vertical extend.
10. **gobo_size:** adjust picture size, the value in 20 is the original size; the value in 0 becomes the zoom effect.
11. **Hor_turn_sp:** adjust the speed of picture when rolling around the vertical lines.
12. **Vert_turn_sp:** adjust the speed of picture when rolling around the level lines.
13. **Hor_move_sp**: adjust the speed of picture when moving in horizontal direction.
14. **Vert_move_sp**: adjust the speed of picture when moving in vertical direction.
15. **Running speed:** adjust the displaying speed of scan shaking-mirror.
16. Auto: Display with the color of drawing
17. Green: display with green.
18. Blue: display with blue.
19. Red: display with red.
20. Purple: display with purple.
21. Yellow: display with yellow.
22. Aqua: display with Aqua.
23. White: display with white.
24. None: Black-out

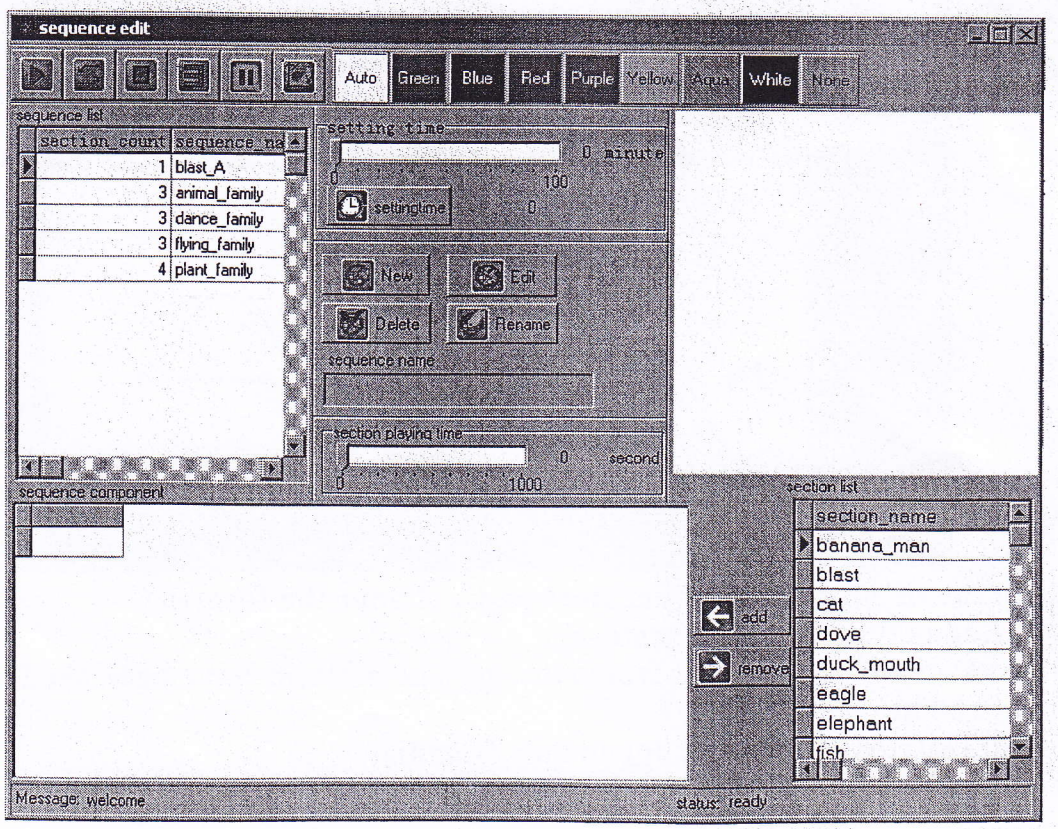
IV. Section



1.Section is one display unit which is made up of several display designs. It includes the setting of designs, display time, color and design change speed and etc.
2.**New**: create a new section. Click *add* button and then will appear a dialogue box. Start the editing after input and confirm the section name. Add and edit the effect of patterns.

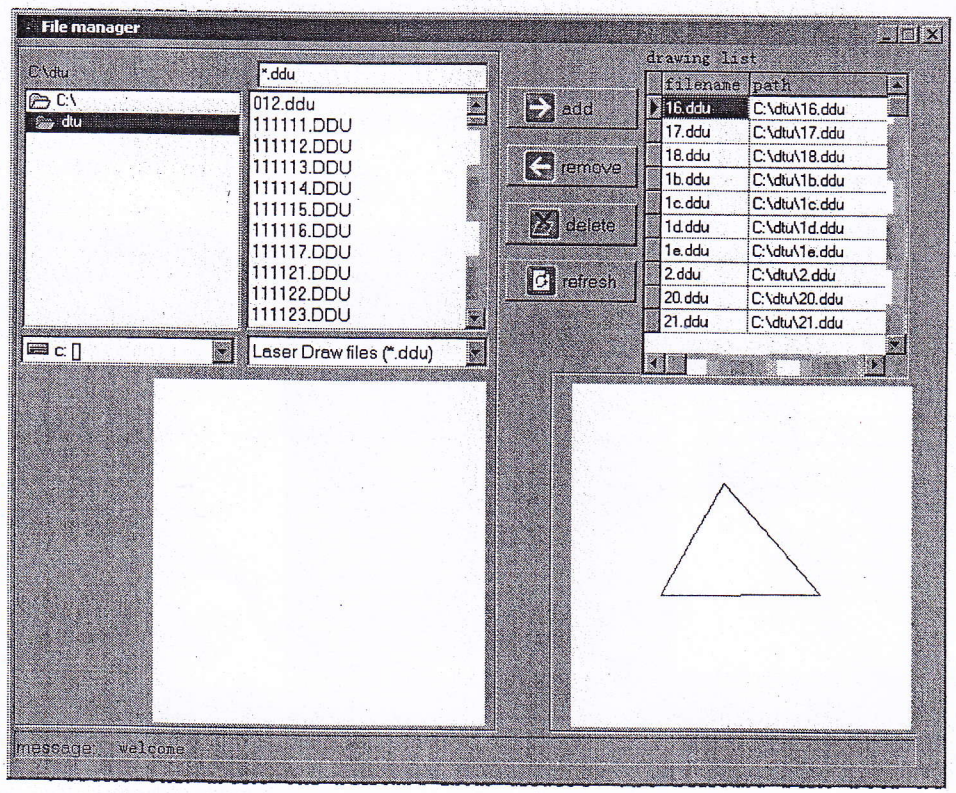
3.**Edit:** open the selected section in section list and then enter the editing mode.
4.**Delete**: delete the opened section in editing condition.
5.**Rename**: rename the display section while editing.
6.**Playing time**: Set the time of design display. The unit is millisecond.
7.The function of rotate speed, gradual drawing speed, horizontal extend, vertical extend, picture size, horizontal rotate, vertical rotate, horizontal move, vertical move, and circulating speed track are the same as the last chapter.
8.Color board: All function of color adjustment is the same as the last chapter while displaying designs. If the color board is automatic while sequence displaying, the color will be set by **color**. If color board is not automatic, the color of laser beam will be controlled by color board.
9.**Add:** add one line in section content under editing condition. This line's rotate speed, drawing speed, horizontal rotate, vertical rotate, horizontal move, vertical move, displaying speed, horizontal extend, vertical extend, size and field are decided by the value of track which has been described by the 7th contents and the color field is decide by color board.
10. **Remove**: Move out the line of section content while editing.
11. Display design: Displaying the design of display list. The track value has been described by the 7th contents decide change effects. Color is set on color board.
12. **Play D:** Displaying the selected section. The section details decide change effects. Color is set on color board.
13. **Circulating mark:** Circulating displaying or not.
14. **Reverse:** The horizontal in anti-direction while Displaying design or section.
15. **Stop:** stop any display.
16. **Pause**: Maintain the present condition of designs, no change.

V. Sequence Editing



1.Sequence is displaying unit which is made up of several sections with regulated displaying time of each section.
2. **New**: create a new sequence. Click it and then will appear a dialogue box. Start the editing after input and confirm the sequence name. Add the section and edit the displaying time.
3. **Edit:** Open the selected sequence, or adjust the displaying sequence into editing condition.
4. **Delete**: delete the opened sequence while editing.
5. **Rename**: rename the display sequence while editing.
6. **Sequence list**: display the selected sequence.
7. The function of circulating mark, anti-direction, pause and color board is the same as the pre-chapter.
8. **Position**: adjust the central position of display.
9. **Add:** Add one line in the sequence, the displaying time will be set under **section display time.**.
10. **remove:** remove the present line of sequence content while editing.
11. **Setting time**: drag track, set time and then click the button to display. If the time setting has been finished, the display will automatically stops, or it can cancel the time setting in the middle of time setting.

VI. File



1.Add or move out patterns from storage. Or change the format.
2.**Add**: Add patterns to pattern storage.
3.**Remove**: move out patterns from storage. The patterns have been used in sequence cannot be moved out.
4.**Delete**: Delete the selected documents from list.
5.**Refresh**: Refresh file list.

Appendix:

ILDA DB 25F PINOUTS DB 25 definens

1	X+	-5 to +5V
2	Y+	-5 to +5V
3	Intensity/Blanking+	0V to +2.5V
4	Interlock A	Connected to pin 17 inside the Qm2000
5	Red+	0V to +2.5V
6	Green+	0V to +2.5V
7	Blue+	0V to +2.5V
8	Deep blue+	0V to +2.5V
9	Yellow+	0V to +2.5V
10	Cyan+	0V to +2.5V
11	Z+	Depth Z(not intensity), -5 to +5V
12	Not connected	
13	Shutter	0V to +5V
14	X−	−5V to +5V
15	Y−	−5V to +5V
16	Intensity/Blanking−	−2.5V to 0V
17	Interlock B	Connected to pin 4 inside the Qm2000
18	Red−	−2.5V to 0V
19	Green−	−2.5V to 0V
20	Blue−	−2.5V to 0V
21	Deep blue−	−2.5V to 0V
22	Yellow−	−2.5V to 0V
23	Cyan−	−2.5V to 0V
24	Z−	−5V to +5V
25	Ground	Cable shield